

Tennessee Pollution Prevention Partnership Success Story



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Information Technology for Hazardous Materials

The Member

Saturn Corporation, a General Motors subsidiary, is located in Spring Hill, Tennessee. Team members produce spaceframe components and body panels, paint vehicles, manufacture engines and transmissions, assemble autos, warehouse retailer parts, and perform ancillary activities.

The Story

Managing hazardous materials in an environmentally sound and cost-effective manner requires adequate knowledge about a wide array of raw materials, complex manufacturing processes, and related emissions. Saturn has adopted electronic management information systems as a critical asset in minimizing environmental, safety, and health risks and supporting continual improvement.

Since Saturn's construction phase, a commercial database has been used to capture Material Safety Data Sheet (MSDS) information and integrate it with other pertinent information such as regulatory lists and usage and purchasing data. System information is used in a variety of ways, such as to:

- Generate "Safe Use Instructions" for team members, describing required Personal Protective Equipment, safe storage and handling, plus spill and disposal instructions
- Generate a "Workplace Chemical list" for team members, identifying where hazardous materials are located and their related "safe use categories"
- Generate Hazardous Chemical inventory reports for off-site local emergency response personnel, describing locations, storage conditions, and primary hazards
- Identify which regulations apply to a material
- Assist pollution prevention analysis, e.g. choosing environmentally preferable materials.

To date, over 6,000 hazardous materials have been evaluated for use at Saturn, with about 1,500 active hazardous materials. Team members, in addition to receiving Safe Use Instructions and Workplace Chemical lists, obtain knowledge about hazardous materials through access to MSDS files, extensive training, and the support of subject matter experts. Recently, Saturn improved hazardous material information systems to better assist team members in hazardous materials management.

The Success

Four changes were implemented over the past year:

1) All MSDSs were digitally imaged using a scanner and optical character recognition (OCR) technology. The scanned documents were then incorporated into Saturn's internal Internet ("intranet") system. Instead of going to file cabinets in each main building to locate MSDS hard copies,

any team member can obtain a MSDS by simply performing a search of the intranet site, using either the material name, manufacturer, or internal tracking number. Information is easily and quickly obtained from any computer on-site. There is no risk of documents becoming damaged or lost over time.

2) Intranet sites, accessible by all team members, have been specifically created for sharing Saturn Safety, Environmental, and Training information, including hazardous material and chemical safety data. These sites include information such as: environmental and safety policies, hazardous material policy and approval procedures, site contact lists, blank MSDS forms, Saturn Safety Council meeting minutes, and descriptions of available safety training classes. Constant dialogue allows proactive hazardous material management to become part of the Saturn norm.

3) Intranet Web-based training to administer annual Right-to-Know hazardous material / chemical safety training has been developed and implemented, as an alternative to traditional classroom and video-based training. The site is designed as a fourteen-question quiz, lead by the "Hazardous Chemical Crusader" animated character. It covers information such as where to find hazardous material information, how to detect hazards, how health could be affected, and protection measures to be used. The advantages of Web-based learning are that team members direct their own learning, can proceed at their own pace, and use interactive exercises and simulations to learn the material.

4) Substantial changes have been made to Saturn's commercial database system, improving compatibility and system performance through increased flexibility. Hyperlinks have been added to relate documents and images.

The Pollution Prevented

Better training, communication and information systems provide invaluable, albeit somewhat intangible, results. The improved systems allow virtually unlimited storage of large amounts of hazardous material information, which can be accessed, analyzed, and updated quickly and easily, even in dealing with complex operations. It allows information to be treated consistently from year to year and between departments. Systems are more than just a regulatory compliance tool. One of the greatest opportunities environmental staff encounters is ensuring other parts of the organization have sufficient understanding to make environmentally-conscious plans and actions. The information systems, used in conjunction with operational controls, provide comprehensive, integrated, proactive hazardous materials management.